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EXAMINER

CHANNAVAJALA, SRIRAMA T

ART UNIT	PAPER NUMBER
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2166

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/994,779	Applicant(s) PINTO ET AL.	
Examiner Srirama Channavajjala	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 17 April 2006.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8 and 10-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 and 10-23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Response to Amendment

1. Claims 1-8,10-23 are pending in this application.
2. A request for continued examination under 37 CFR 1.114 including fee set forth in 37 CFR 1.17(e), was filed on 4/17/2006 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114, a non-final office action is as follows:
 3. Examiner acknowledges applicant's amendment filed on 2/28/2005.
 4. Claims 5,8,10,15,17-18,23 have been amended [2/28/2005].
 5. Claim 9 has been cancelled [2/28/2005].
 6. In view of applicant's amendment to claims 7,15,23, the objection set forth in the previous office action is hereby withdrawn.
 7. In view of "Amendment to the Abstract", submitted on 2/28/2004, the objection to the Abstract set forth in the previous office action is hereby withdrawn.

Drawings

8. The drawings filed on 11/28/2001 are objected to by the Draftsperson under 37 CFR 1.84 or 1.152, [see PTO-948], formal drawings are required in response to this office action. These drawings are acceptable for examination purpose only.

Information Disclosure Statement

9. The information disclosure statement (IDS) submitted on 3/7/2005, is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner, a copy of PTO-1449 is hereby enclosed with this office action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

As noted in MPEP 2106: "Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory" and "[s]ince a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and Office personnel should treat a claim for a computer program, without the computer-readable medium needed to realized the computer program's functionality, as nonstatutory functional descriptive material."

As set forth in MPEP 2106(II)A:

Identify and understand Any Practical Application Asserted for the Invention

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The claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result.” State Street, 149 F.3d at 1373, 47USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of “real world” value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.

Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some “real world” value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a “useful, concrete and tangible” result to have a practical application.

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10. Claims 1-8,10-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The invention as claimed in claims 1-8,10-21 are interpreted in light of the specification particularly page 8, line 1-19,page 14, line 2-16, page 15, line 16-20, page 19-23, page 31 is directed to a method, system which is a combination of hardware and software or a method which is preformed using hardware and software or software per sa, both system and method performing a mathematical algorithm, formula, or calculation, and as such the claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a **“useful, concrete and tangible result.”**

The Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

Claims 1,8,17 have the result of producing for example in claim 1,8,17, “determining whether there are pre-post buffers specified....if there are pre-post receive buffers specified for the client, posting a client specified number of receive buffers.....if no pre-post receive buffers are specified for the client, posting a default number of

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receive buffers at the management queue pairs to receive the incoming data message” ; or otherwise used in the real world. However, it appears that these limitations are merely software routines or algorithm [see page 24, line 3-9] of abstract in nature, further, claims 1,8,17 **do not specify that the result** or output the results to a user or otherwise used in the real world, furthermore, there is no use of this **“if no pre-post receive buffers are specified for the client, posting a default number of receive buffers at the management queue pairs to receive the incoming data message”** [as claimed in claims 1,8,17] is set forth that would constitute a real-world result, but merely this algorithm or software code stored in a computer readable medium. Thus, the claimed result is not a “useful, concrete and tangible result.” The court in State Street noted that the claimed invention in Alappat constituted a practical application of an abstract idea because it produced *a useful, concrete and tangible result* the display of a smoothed heart beat to a system user. The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine or process for the purpose of a § 101 analysis. AT&T, 172 F.3d at 1358, 50 USPQ2d at 1451 (see the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex II).

The examiner reviewed the specification but was unable to find a practical real-world use of the result (if no pre-post receive buffers are specified for the client, posting a default number of receive buffers at the incoming data message). If the applicant is able to find one and inserts it into the claims provide the location the element is found in the specification.

In the analysis above, claims 2-7,10-16,18-23

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11. Claim 17, line 1, preamble, reads: "A computer readable medium comprising instructions....."

Note: Applicant is advised to amend "computer readable medium" to read as computer readable storage medium, also amend claim 17 to add "instructions" to each limitation

Also see 35 USC 101 Interim Guidelines

"<http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html> "

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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12. Claims 1-7,17-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Craddock et al., [hereafter. Craddock], US Patent No. 6789143

13. As to Claim 1, 17, Craddock teaches a system which including 'managing an incoming data message at a host node in a switched fabric' [see col 4, line 10-18, line 46-48, fig 1], Craddock is directed to queue management, more specifically queue management in a distributing computing environment where host processor node connected in a system area network that including switched communications fabric fig 1, element 116 ;

'determining whether if there are pre-post buffers specified for a client upon registration by the client' [col 7, line 61-66,col 9, line 13-15, fig 4], Craddock specifically teaches work request connected to the work queue elements or buffers that registers and generates work request,

'if there are pre-post receive buffers specified for the client, posting a client specified number of receive buffers at management queue pairs (QPs) to receive the incoming data message' [col 8, line 6-11, line 15-27, col 9, line 33-37], Craddock suggests work queue contains work queue elements or buffers receive and place incoming data or message, further, queue is used to create and describe notification for multiple queue pairs as detailed in fig 4, col 8, line 15-27, col 9, line 33-37 that corresponds to buffers at management queue pairs;

'if no pre-post receive buffers are specified for the client, posting a default number of receive buffers at the management queue pairs (QPs) to receive the

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incoming data message' [col 9, line 44-49, 59-62], Craddock suggests calculating required queue pairs for each host processor node, further host processor node includes queue pairs for example fig 1, element 4,6,7 is default number of queue pairs as detailed in col 9, line 59-62.

14. As to Claim 2, 18, Craddock disclosed 'continuing to monitor and receive incoming data messages, and determining if the number of posted receive buffers falls below a threshold value' [col 9, line 5-10], Craddock specifically teaches a threshold value is defined to compare the several read-write operations , particularly compare and swap condition; 'if the number of posted receive buffers falls below the threshold value, posting additional receive buffers to receive the incoming data messages' [col 9, line 14-16].

15. As to Claim 3, 19, Craddock disclosed 'if the number of posted receive buffers exceeds an upper threshold value, removing a designated number of receive buffers posted to receive the additional incoming data messages so as to conserve resources' [col 9, line 44-47].

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16. As to Claim 4, 20, Craddock disclosed 'monitoring a receive buffer usage of the client based on the number of incoming data messages received for the client are received' [col 10, line 24-26], 'increasing the number of receive buffers posted on behalf of the client to receive the number of incoming data messages intended for the client' [col 10, line 37-41].

17. As to claims 5,21, Craddock disclosed 'default value of number of receive buffers is set by a fabric administrator based on operating conditions of the switched fabric, including a fabric size and a traffic pattern' [col 11, line 64-67, col 12, line 12-30]

18. As to claims 6,22, Craddock disclosed 'threshold value is set by a fabric administrator based on operating conditions of the switched fabric, including a number of local clients registered at the host node in the switched fabric' [col 10, line 47-54, col 11, line 22-28].

19. As to claims 7,23, Craddock disclosed 'wherein the management queue pairs (QP) are unreliable datagram (UD) queue pairs, including QPO managed by an agent of subnet services known as Subnet Management Agent and QPI managed by the agent of general services, known as General Services Agent (GSA)' [col 6, line 56-67, col 7, line 26-32]],

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20. Claims 8-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kagan et al., [hereafter Kagan], US Pub No. 2002/0152328 based on provisional application No. 60/283,018 filed on April 11, 2001

21. As to Claim 8, Kagan teaches a system which including 'at least one channel adapter (CA) including one or more ports to support data transfers via subnet [see fig 1, page 1, col 1, 0004], channel adapters corresponds to Kagan fig 1 where channel adapters take the form of host channel adapters as detailed in page 1, col 1, 0004;

'an access module including a general services agent (GSA) and a subnet management agent (SMA) [see fig 1] to enable one or more entities to send and receive data messages of management services on the host system via the subnet [fig 1, page 1, col 1, 0005, page 1, col 2, 0010] Kagan specifically teaches in order to send and receive messages, client initiates work requests known as work queue elements that are placed onto appropriate queue [page 1, col 1, 0005], further, these message operations are tracked and all the requests have been processed on each "queue pair" as detailed in page 1, col 2, 0010, including to determine an optimal number of receive buffers to post at management queue pairs (QPs) so as to receive an incoming data message from the subnet' [page 1, col 2, 0011, fig 2], QPs corresponds to Kagan's "queue pair" because execution unit queues query pairs;

'wherein one of the General Services Agent (GSA) and the Subnet Management Agent (SMA) is configured to' [fig 1, page 1, col 1, 0003, page 2, col 1, 0016], Kagan specifically teaches InfiniBand architecture supports host channel

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adapter further having various element that including Subnet Management having port[s] for switching where subnet manager associated with subnet that assigns to specific ports as detailed in fig 1-2;

'determine whether there are pre-post receive buffers specified for a client upon registration by the client' [fig 3, page 5, 0063]; Kagan suggests EXE buffer, TCU buffer, QPC buffer connected to the dispatcher typically request messages or contains entry related to record;

'if there are pre-post receive buffers specified for the client, post a client specified number of receive buffers at the management queue pairs (QPs) to receive the incoming data message' [page 5, col 2, 0064]; Kagan specifically teaches descriptor address and size of the message in the host memory related to work queue element;

'if no pre-post receive buffers are specified for the client, post a default number of receive buffers at the management queue pairs (QPs) to receive the incoming data message' [page 5, col 2, 0065, 0072, fig 4]

22. As to Claim 10, Kagan teaches a system which including 'monitor and receive incoming data messages, and determine if the number of posted receive buffers falls below a threshold value' [page 6, col 1, 0073]; 'if the number of posted receive buffers falls below the threshold value, post additional receive buffers to receive the incoming data messages' [page 6, col 1, 0074].

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23. As to Claim 11, Kagan teaches 'wherein one of the general services agent (GSA) and the subnet management agent (SMA) is further configured to remove a designated number of receive buffers posted to receive the additional incoming data messages so as to conserve resources, if the number of posted receive buffers exceeds an upper threshold value' [page 6, col 1, 0075].

24. As to Claim 12, Kagan teaches a system which including 'general service agent and the subnet management is further configured to monitor a receive buffer usage of the client based on the number of incoming data messages received for the client are received, and increases the number of receive buffers posted on behalf of the client to receive the number of incoming data messages intended for the client' [page 5, col 1, 0059, page 6, col 1, 0073].

25. As to Claim 13, Kagan teaches a system 'the default value of number of receive buffers is set by a fabric administrator based on operating conditions of the subnet, including a subnet size and a traffic pattern' fig 1-2,page 4, col 1, 0051].

26. As to Claim 14, Kagan teaches a system which including 'threshold value is set by a fabric administrator based on operating conditions of the subnet, including a number of local clients registered at the host system in the subnet' [fig 1-2, page 4, 0051, 0053].

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27. As to Claim 15, Kagan teaches 'management queue pairs (QP) [page 1, 0007] including QPO managed by an agent of subnet services, known as subnet management agent (SMA) [page 1, 0009], 'QP1 managed by the agent of general services known as General Services Agent (GSA) in accordance with the "InfiniBand architecture specification" [page 1, col 1, 0003].

28. As to Claim 16, Kagan teaches a system which including 'management services include a subnet administration service which provides data path information to reach fabric-attached devices [see fig 1-2]; 'a communication management service which provides the means to set up and manage communications between queue pairs (QP)' [page 2, 0015]; 'a performance management service which specifies a set of facilities for examining various performance characteristics of the subnet' [page 2, 0016]; 'a device management service which specifies the means for determining the type and location of various types of fabric-attached devices' [page 4, col 1, 0051]; 'a device configuration service which assigns fabric-attached devices to the host system' [fig 1-2]; 'a baseboard management service which allows management of the fabric-attached devices and a network protocol service which specifies mechanisms to support transport of simple network management protocol "SNMP" operations through subnet' [page 4, 0055].

Response to Arguments

29. Applicant's arguments filed on 4/17/2006 with respect to claims 1-8,10-23 have been fully considered, further claims 1-7,17-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Craddock et al., [hereafter. Craddock], US Patent No. 6789143, and Claims 8-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kagan et al.,[hereafter Kagan], US Pub No.2002/0152328 based on provisional application No. 60/283,018 filed on April 11, 2001

Conclusion


The prior art made of record

- a. US Patent No. 6789143
- b. US Pub No. 2002/0152328
- c. 60/283,018

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 703/872-9306 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

sc
Patent Examiner.
May 18, 2005.


SRIRAMA CHANNAVAJJALA
PRIMARY EXAMINER